

## CLAIMS :

1. A fundus camera with a focus aid mark projecting system including :
  - an objective lens for forming a subject eye fundus image at a plane within the fundus camera,
  - 210 an image focus adjustment lens that may moved to adjust the focus of the imaging system so that it is focussed on the same plane as a first image of the subject eye fundus formed within the fundus camera,
  - 215 a focus aid mark projection system which includes a moving focus aid mark focussing lens that moves so as to move the focus of the focus aid mark so that it is coplanar with the focal plane of the imaging system, where wherein the focussing lens is attached to the imaging system focus adjustment lens so as to move with that lens
2. A fundus camera of claim 1 which has one or more non-moving lenses in the same optical path as the focus aid mark focussing lens.
- 220 3. A fundus camera of claim 1 A fundus camera of claim 1 wherein the focussing lens is a negative lens and the non-moving lenses are positive lenses
4. A fundus camera of claim 1 wherein the focus aid mark is formed as an image of a slit or similar aperture in the focus aid mark projection system.
- 225 5. A fundus camera of claim 5 which includes a pair of deflecting prisms that deflect the light from the slit along separated optical paths such that two images of the slit are formed that are only aligned to form a single image of the slit at a focal plane of the focus aid mark projection system.
- 230 6. A fundus camera of claim 2 wherein the powers of the focus aid mark focussing and the fixed lenses in the same optical path are chosen such that the image of the focus aid mark forming slit and a plane conjugate with the system imaging plane are always substantially coplanar.
7. A fundus camera with an alignment mark projecting system including :
  - an objective lens for forming an eye fundus image at a plane within the fundus camera,
  - 235 at least one fundus illuminating light source,
  - a reflective means for directing the or each light source onto the fundus,
  - at least one condenser lens for directing the or each light source onto the reflecting means,
  - 240 an alignment mark light source that shares part of the optical path between the fundus illuminating light source and the reflective means.
8. A fundus camera of claim 7 with a slit or other aperture for forming a mark from the alignment mark light source that is coplanar with the eye pupil when the fundus camera is correctly positioned,
- 245 9. A fundus camera of claim7 wherein light from the alignment mark light source and slit is combined with the optical path of the fundus illumination light by a second reflecting means adjacent to a illumination stop in the illumination system such that the slit and illumination stop are both conjugate with the plane of the eye pupil when the fundus camera is correctly positioned.
- 250 10. A fundus camera of claim 7 which includes a pair of deflecting prisms that deflect the light from the slit along two separated optical paths such that two images of the slit are formed that are only aligned to form a single image of the slit at a plane coplanar with the eye pupil when the fundus camera is correctly aligned.